

REMARKS/ARGUMENTS

Claims 1-22 are pending.

Claims 1-22 are rejected under 35 U.S.C. § 102(e) as being anticipated by Hainberger et al., U.S. Patent Application Publication No. 2004/0004756.

As discussed below, it is earnestly believed that Hainberger et al. fails to teach or even suggest the present invention as recited in the pending claims. Nonetheless, claims 1, 2, 5, 8, and 11 have been amended to more clearly recite the present invention. The other claims have not been amended.

The present invention as recited in the pending claims includes separating a received light signal into bands, and making the power level in each band substantially equal to one another. Also, the power of the optical signals in each band is adjusted to compensate for level variances among the wavelengths in the optical signal.

Hainberger et al. was cited in the Section 102 rejection of the claims. In particular, Fig. 2C and Fig. 2D were cited for allegedly showing the present invention as claimed. It seems from the discussion in the Office action, the two figures were interpreted as showing separation of a received signal into two bands (Fig. 2C), followed by adjusting the bands to have the same power level (graph shown in Fig. 2D). With respect, however, the Examiner has misunderstood what is shown in Fig. 2C and Fig. 2D of Hainberger et al. These two figures refer to *different* WDM transmission systems, and have nothing to do with each other. Moreover, neither figure shows or even suggests the present invention.

Figs. 2B and 2C illustrate the use of a counter-propagating amplification technique to average out power fluctuations due to bit-pattern dependent amplification in the optical signal. This technique compensates for SRS effects by propagating light in the reverse direction. Fig. 2B shows a conventional two-band (C-band and L-band) system, while Fig. 2C shows an experimental 3-band system. *Paragraph [0015]*. The C-band and L-band amplifiers do not perform power level equalization. Figs. 2B and 2C do not show the present invention wherein a received signal is separated into bands and the power level of each band is adjusted.

Fig. 2D of Hainberger et al. illustrates a technique used in dense WDM systems in which bi-directional signals are channel-interleaved to reduce the effects of nonlinear interaction between channels, such as cross phase modulation and four wave mixing. *Paragraph [0016].* Thus, Fig. 2D does not show the present invention wherein a received signal is separated into bands and the power level of each band is adjusted.

As understood, Hainberger et al. teach a technique for using substitute pump lights in a situation where the power transfer from the shorter to the longer wavelengths due to stimulated Raman scattering is not sufficient for the transmission of the longer wavelength channels. The substitute pump lights of wavelengths in the shorter bands such as S+ and/or S band can be supplied to compensate for the less or no power transfer. The number of substitute pump lights or the power levels thereof can be adjusted based on the power levels of the longer wavelength bands such as C and L bands. *Paragraph [0071].*

As shown in Fig. 8, Hainberger et al. monitor each wavelength in the signal with a photodiode. If the optical signal is weak, then the CPU (12) supplies a substitute pump light to the signal. *Paragraphs [0073] and [0074].*

Hainberger et al. do not show the features recited in the pending claims. Hainberger et al. teach inserting a substitute pump light to increase power in certain bands. By contrast, the present invention separates a received light signal into multiple bands, and then adjusts the power level in each band to be substantially equal to each other. The Section 102 rejection is believed to be overcome.

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Reply to Office Action of December 21, 2004

PATENT

CONCLUSION

In view of the foregoing, all claims now pending in this Application are believed to be in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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